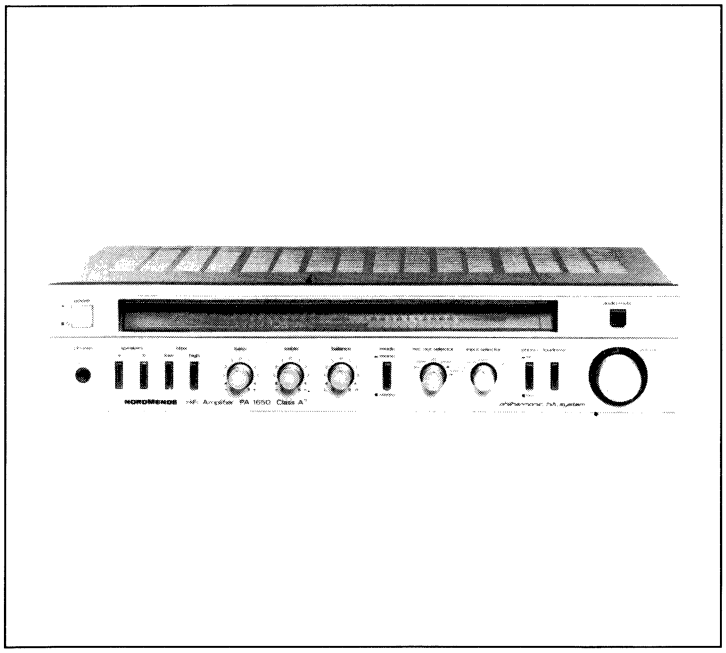


NORDMENDE

Zentralkundendienst

Service-Information
PA 1650 A 982.162 H

Technische Daten

Geräteart:
Class A Stereo-Vollverstärker

Stromversorgung:
220 V – 50 Hz

Leistungsaufnahme:
390 W

Ausgangsleistung:
2 x 75 W Sinus an 8 Ω

Klirrfaktor:
Bei 70 W: 0,0008 %

Geräuschspannungs-abstand:
TA: MC: 70 dB
MM: 90 dB
TB: 100 dB

Übersprechdämpfung:
60 dB

Frequenzumfang:
TA 20 Hz – 20 kHz ± 1 dB
TB 5 Hz – 100 kHz ± 1,5 dB

Eingangsempfindlichkeit/Impedanz:
TA: MM: 2,5 mV/ 47 kΩ
MC: 250 µV/100 Ω
TB: 150 mV/ 47 kΩ

Klangregelung:
Bass ± 10 dB bei 100 Hz
Höhen ± 10 dB bei 10 kHz

Abmessungen:
B 440 mm
H 94 mm
T 298 mm

Gewicht:
6,5 kg

Technical data

Type of set:
Stereo pre-main amplifier

Power supply:
220 V – 50 Hz

Power consumption:
390 W

Output power:
2 x 75 W sinus at 8 Ω

Total harmonic distorsion:
At 70 W: 0,0008 %

Signal to noise ratio at rated power output (weighted):
TA: MC: 70 dB
MM: 90 dB
TB: 100 dB

Crosstalk between channel:
60 dB

Frequency response:
Phono 20 Hz – 20 kHz ± 1 dB
Aux/tape play 5 Hz – 100 kHz ± 1,5 dB

Input sensitivity/impedance:
Phono MM: 2,5 mV/ 47 kΩ
MC: 250 µV/100 Ω
Aux/tape play: 150 mV/ 47 kΩ

Tone control:
Bass ± 10 dB at 100 Hz
Treble ± 10 dB at 10 kHz

Dimensions:
W 440 mm
H 94 mm
D 298 mm

Weight:
6,5 kg

Dati tecnici

Tipo di apparecchio:
Preamplificatore-amplificatore stereofonico

Alimentazione:
220 V – 50 Hz

Consumo:
390 W

Potenza di uscita:
2 x 75 W sinus su 8 Ω

Distorsione armonica:
A 70 W: 0,0008 %

Rapporto segnale/ disturbo:
TA: MC: 70 dB
MM: 90 dB
TB: 100 dB

Diafonia:
60 dB

Curva di risposta:
Giradischi 20 Hz – 20 kHz ± 1 dB
Magnetofono 5 Hz – 100 kHz ± 1,5 dB

Sensibilita/impedenza:
Giradischi: AM: 2,5 mV/ 47 kΩ
BM: 250 µV/100 Ω
Magnetofono: 150 mV/ 47 kΩ

Tono:
Grave ± 10 dB à 100 Hz
Acuto ± 10 dB à 10 kHz

Dimensioni:
L 440 mm
A 94 mm
P 298 mm

Peso:
6,5 kg

Diese Angaben und Hinweise sind ausschließlich für den Service des Fachhändlers bestimmt · Änderungen vorbehalten
These instructions are for service dealers only · Subject to modification
Questi dati ed istruzioni sono destinati esclusivamente al servizio assistenza clienti · Con riserva di modifiche

Abgleichanweisung

1. Verstärker-Endeinstellung

Vorbereitung:
SVR 731, 732, 831, 832 auf linken Anschlag drehen. Kein Eingangssignal. Lautstärkeregler auf min. Digitalvoltmeter an R 786 und R 886.

Vor dem Einstellen Gerät ca. 10 Minuten in Betrieb nehmen.

Einstellung:
Mit SVR 731, SVR 732 und SVR 831, SVR 832 auf 20 mV einstellen.

2. LED-Austeuerungsanzeige-Einstellung

Vorbereitung:
SVR 501, 502, 601, 602 auf mechanische Mitte stellen. Ohne Eingangssignal muß jeweils das „0 W-LED" an der linken Seite aufleuchten (bei dieser Voreinstellung können bis zu 3 LED's links aufleuchten).

2.1 Bezugspegeleinstellung
(zweite LED von rechts)

Vorbereitung:
1-kHz-Sinussignal auf Eingang (AUX) geben. Verstärkerausgang so einstellen, daß die Verstärkerausgangsspannung 25,2 – 25,6 V beträgt (80 W).

Einstellung:
a) Die „80-W-LED" mit SVR 501, 601 zum Aufleuchten bringen. Signal um 0,4 dB verringern; die „80-W-LED" muß erlöschen.
b) Signal um 2 dB (von Wert a.) erhöhen. Alle LED's müssen aufleuchten.

2.2 Bezugspegeleinstellung
(zweite LED links)

Mit Abschwächer Signal um 26 dB (von Wert b.) verringern. Verstärkerausgang auf 1,5 V (0,3 W) einstellen. Mit SVR 502, 602, die „0,3-W-LED" zum Aufleuchten bringen. Signal um 1 dB verringern, die „0,3-W-LED" muß erlöschen.

Alignment instructions

1. Amplifier final adjustment

Preparation:
Turn SVR 731, 732, 831, 832 to the left hand stop. No input signal. Volume control to min. Digital voltmeter to R 786 and R 886.

Before adjustment allow the amplifier to warm up for approximately 10 minutes.

Adjustment:
Adjust SVR 731, SVR 732 and SVR 831, SVR 832 for 20 mV.

2. LED Level control indicator adjustment

Preparation:
Set SVR 501, 502, 601, 602 to mechanical centre. Without an input signal the "0 W-LED" at the left hand side must illuminate (with this pre-adjustment up to 3 LED's on the left can illuminate).

2.1 Reference level adjustment
(second LED from right)

Preparation:
Apply a 1 kHz sinewave signal to the AUX input. Adjust the amplifier output for an output voltage of 25,2 – 25,6 V (80 W).

Adjustment:
a) Bring the "80 W LED" to illumination with SVR 501, 601. Decrease the signal by 0,4 dB; the "80 W LED" must extinguish.
b) Increase the signal by 2 dB (from value a.). All LED's must illuminate.

2.2 Reference level adjustment
(second LED from left)

With a signal attenuated by 26 dB (from value b.). Set the amplifier output to 1,5 mV (0,3 W). Bring the "0,3 W LED" to illumination with SVR 502, 602. Attenuate the signal by 1 dB, the "0,3 W LED" must extinguish.

Norme di taratura

1. Messa a punto finale dell'amplificatore

Operazioni preliminari:
Portare SVR 731, 732, 831 e 832 in posizione d'arresto di fine corsa sinistro. Senza segnale d'entrata. Regolare il comando del volume su minimo. Collegare un voltmetro digitale a R 786 ed R 886.

Prima della messa a punto far funzionare l'apparecchio durante circa 10 minuti.

Messa a punto:
Regolare la tensione su 20 mV mediante SVR 731, SVR 732 ed SVR 831, SVR 832.

2. Messa a punto del display di modulazione LED

Operazioni preliminari:
Portare SVR 501, 502, 601 e 602 in posizione meccanica media. Senza segnale d'entrata il "0 W-LED" sulla parte sinistra deve illuminarsi (con questa preregolazione si possono illuminare sul lato sinistro fino a 3 LED).

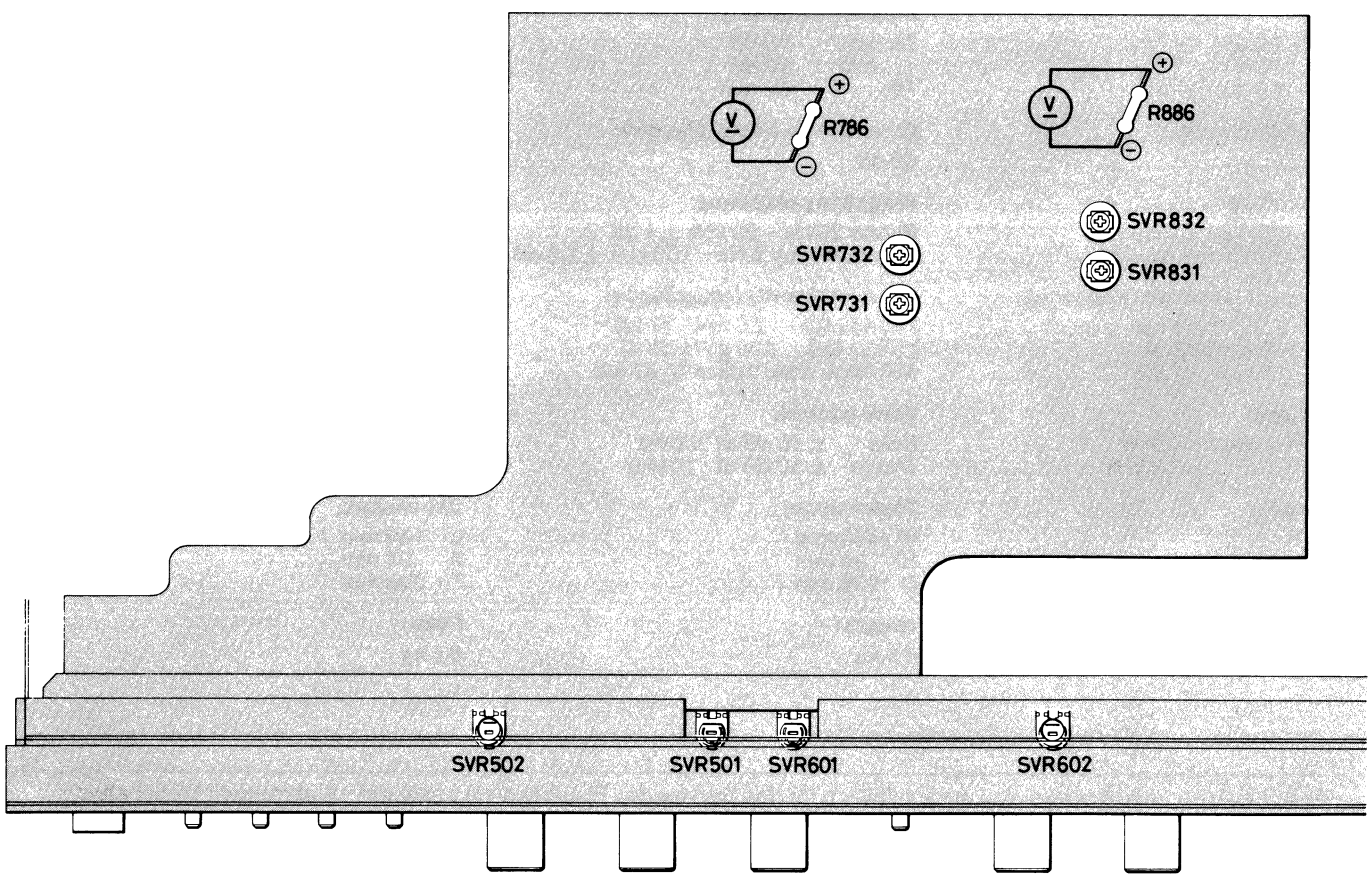
2.1 Messa a punto del livello di riferimento
(secondo LED da destra)

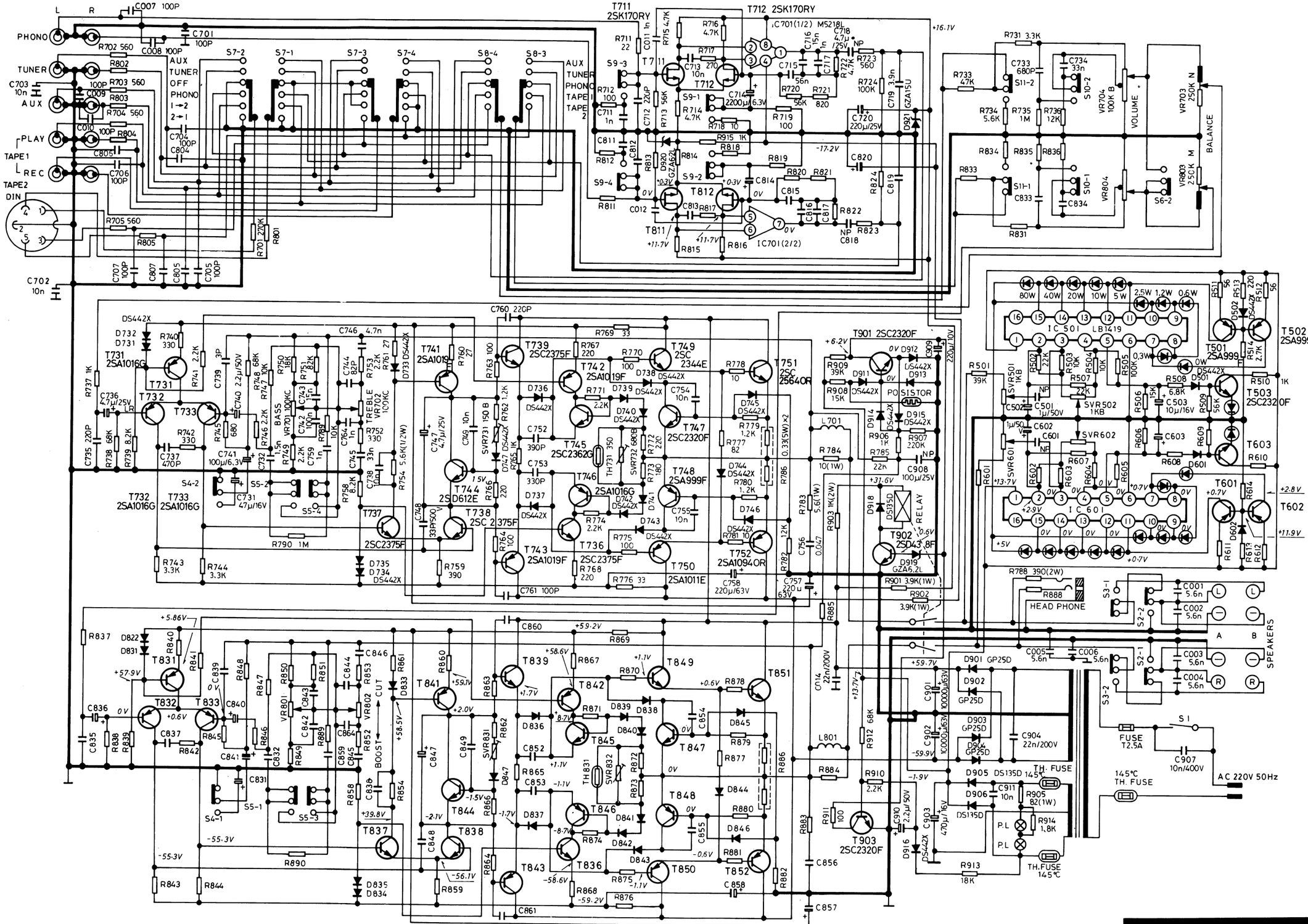
Operazioni preliminari:
Introdurre un segnale sinusoidale di 1 kHz nell'entrata AUX. Regolare l'uscita dell'amplificatore in modo tale che la tensione d'uscita dell'amplificatore sia di 25,2 – 25,6 V (80 W).

Messa a punto:
a) Portare la luccicare il LED 80 W mediante SVR 501, 601. Ridurre il segnale di 0,4 dB; il LED 80 W deve spegnersi.
b) Aumentare il segnale di 2 dB (dal valore a). Tutti i LED devono illuminarsi.

2.2 Messa a punto del livello di riferimento
(secondo LED da sinistra)

Ridurre il segnale di 26 dB (dal valore b) mediante un'attenuatore. Regolare l'uscita dell'amplificatore su 1,5 V (0,3 W). Portare a luccicare il LED 0,3 W. Ridurre il segnale di 1 dB. Il LED 0,3 W deve spegnersi.




PHONO
TUNER
AUX
PLAY
TAPE1 REC
TAPE2 DIN
AUX TUNER OFF PHONO 1→2 2→1
AUX TUNER PHONO TAPE1 TAPE2
T711 2SK170RY
T712 2SK170RY
IC701(1/2) M5218L
IC701(2/2)
T731 2SA1016G
T732 2SA1016G
T733 2SA1016G
T741 2SA1019
T742 2SA1019F
T743 2SA1019F
T744 2SD612E
T745 2SC2362G
T746 2SA1016G
T747 2SC2320F
T748 2SA999F
T749 2SC 2344E
T750 2SA1011E
T751 2SC 2540R
T752 2SA1094OR
T736 2SC2375F
T737 2SC2375F
T738 2SC 2375F
T739 2SC2375F
T811
T812
T831
T832
T833
T837
T839
T841
T842
T843
T844
T845
T846
T847
T848
T849
T850
T851
T852
T901 2SC2320F
T902 2SD438F
T903 2SC2320F
T501 2SA999
T502 2SA999F
T503 2SC2320F
T601
T602
T603
IC 501 LB1419
IC 601
VOLUME
BALANCE
VR704 100K B
VR703 250K N
VR803 250K M
VR804
SVR501 1KB
SVR502 1KB
SVR601
SVR602
SVR731
SVR832
TH731 350
TREBLE VR702 100KC
BASS VR701 100KC
VR801
VR802
CUT BOOST
POSISTOR
RELAY
HEAD PHONE
SPEAKERS
FUSE T2.5A
145℃ TH. FUSE
TH. FUSE 145℃
AC 220V 50Hz
S1
S2-1
S2-2
S3-1
S3-2
S4-1
S4-2
S5-1
S5-2
S5-3
S5-4
S6-2
S7-1
S7-2
S7-3
S7-4
S8-3
S8-4
S9-1
S9-2
S9-3
S9-4
S10-1
S10-2
S11-1
S11-2
D920 GZA6.2
D921 GZA15U
D919 GZA6.2L
D901 GP25D
D902 GP25D
D903 GP25D
D904 GP25D
D905 DS135D
D906 DS135D
D907 RELAY
D908 DS442X
D909 DS442X
D910 DS442X
D911 DS442X
D912 DS442X
D913 DS442X
D914 DS442X
D915 DS442X
D916 DS442X
D918 DS135D
+16.1V
-17.2V
+11.7V
-11.7V
+6.2V
+31.6V
+13.7V
-13.7V
+59.7V
-59.9V
+5.86V
-55.3V
+57.9V
+58.5V
+39.8V
+59.2V
-56.1V
+58.6V
-58.6V
+59.1V
+2.0V
-2.1V
+1.7V
-1.7V
+1.1V
-1.1V
+8.7V
-8.7V
+0.6V
-0.6V
+0.3V
-0.3V
+2.8V
+11.9V
+0.7V
+2.9V
+5V
+0.6V
-1.9V
+1.5V
-1.5V
AUX
TAPE
PHONE
TUNER
VOLUME
BALANCE
A
B
L
R
NP
NORDMENDE
PA 1650 A 982.162 H
KD 187.442

Schalterfunktionen

S 1	Ein-/Aus-Taste
S 2	1. Lautsprechergruppe A
S 3	2. Lautsprechergruppe B
S 4	Rumpelfilter-Taste
S 5	Rauschfilter-Taste
S 6	Mono-/Stereo-Schalter
S 7	Ausgang-Wahlschalter
S 8	Eingang-Wahlschalter
S 9	Tonabnehmersystem-Taste
S 10	Taste „loudness“
S 11	Taste „mute“

Switch functions

S 1	On-/Off button
S 2	1st loudspeaker group A
S 3	2nd loudspeaker group B
S 4	Rumble filter switch
S 5	Noise filter switch
S 6	Mono-/Stereo switch
S 7	Output selector switch
S 8	Input selector switch
S 9	Pick-up system switch
S 10	“Loudness” switch
S 11	“Mute” switch

Funzioni dei commutatori

S 1	Tasto Acceso/Spento
S 2	1. gruppo di casse acustiche A
S 3	2. gruppo di casse acustiche B
S 4	Tasto per filtro del rumore
S 5	Tasto per filtro del fruscio
S 6	Commutatore mono/stereo
S 7	Tasto selettore d'uscita
S 8	Tasto selettore d'entrata
S 9	Tasto per sistema pick-up
S 10	Tasto “loudness”
S 11	Tasto “mute”

NORDMENDE

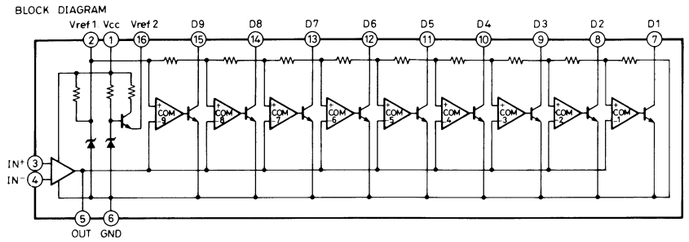
PA 1650 A 982.162 H

KD 187.442

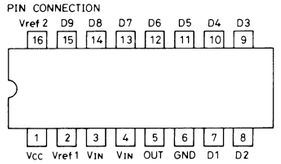
Leiterplatte Regler und Endverstärker — *P.C.B. Controls and power amplifier* — Piastra comandi e amplificatore finale

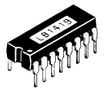
LB1419 (9 Digit Level Meter)

BLOCK DIAGRAM

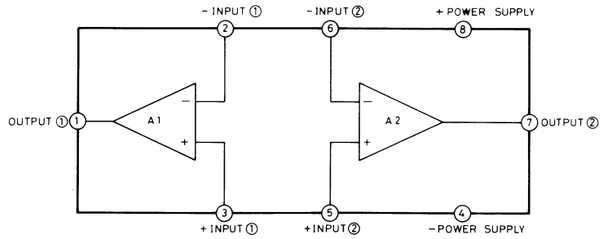

Vref1 Vcc Vref2 D9 D8 D7 D6 D5 D4 D3 D2 D1
2 1 16 15 14 13 12 11 10 9 8 7
COM 8 COM 7 COM 6 COM 5 COM 4 COM 3 COM 2 COM 1 COM 0
IN+ 3
IN- 4
5 6
OUT GND

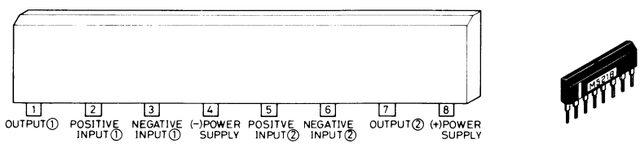
PIN CONNECTION



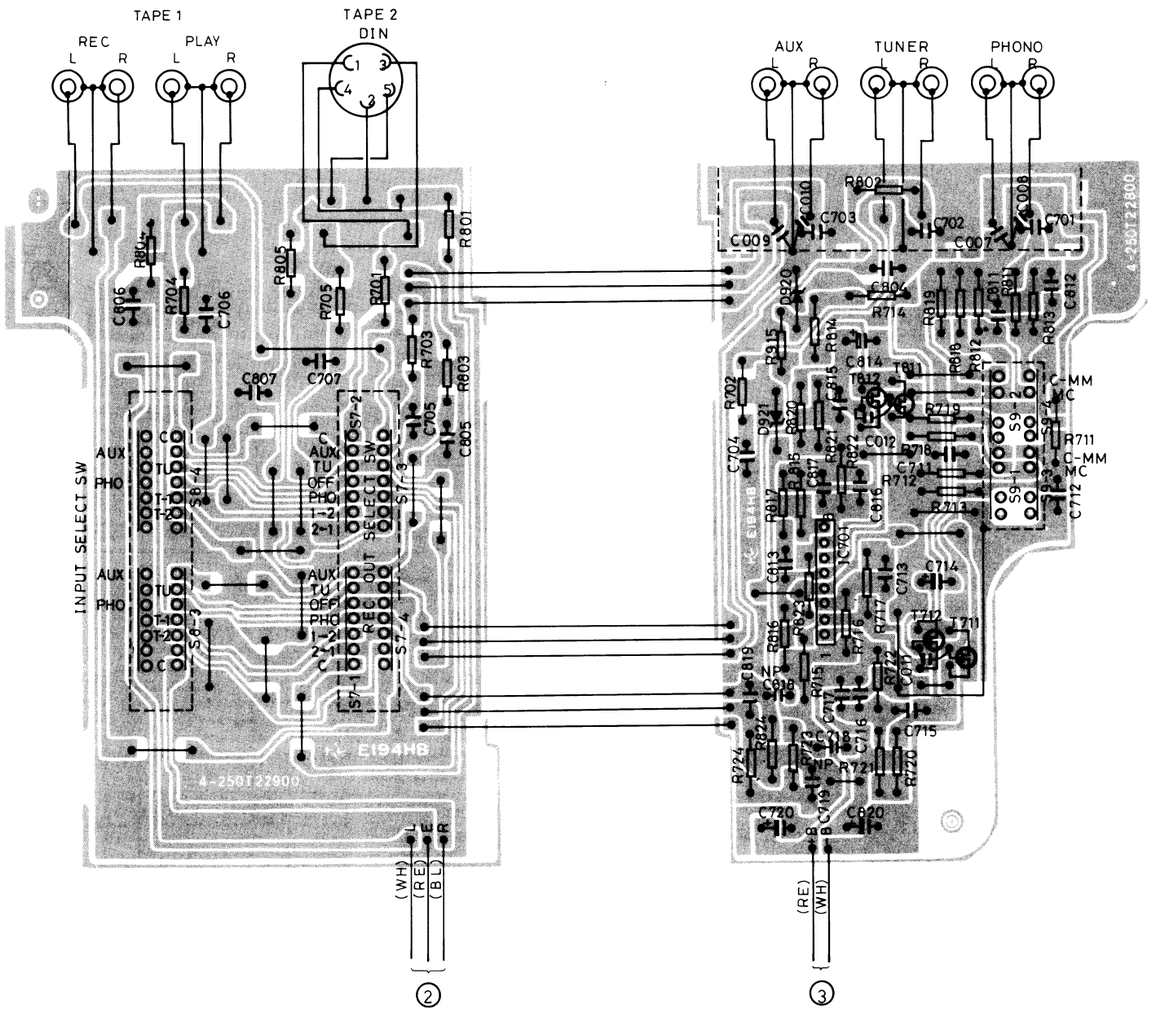


M5218L (Dual Low Noise Operation Amplifier)

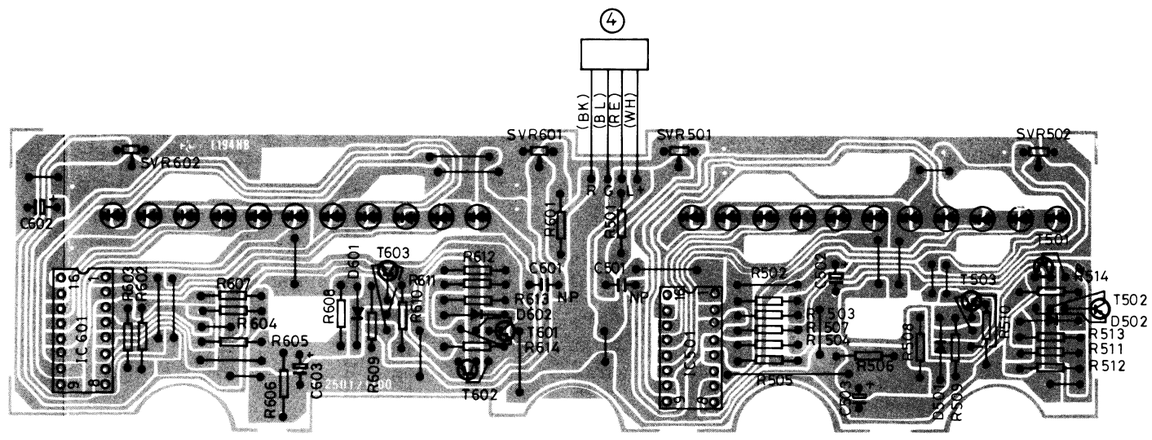




IC-Schaltungen
IC diagrams
Schema circuiti integrati

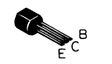


Leiterplatten Buchsen — *P.C.B. Terminals*
Piastra prese

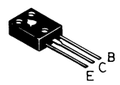


Leiterplatte Ausgangsleistungsanzeige
P.C.B. Output level — Piastra output level

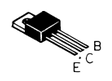
T731 732 733 746 / T831 832 833 846 ----- 2SA1016
T745 845 ----- 2SC2362
T748 848 ----- 2SA999
T747 847 901 903 ----- 2SC2320



T744 844 ---------- 2SD612



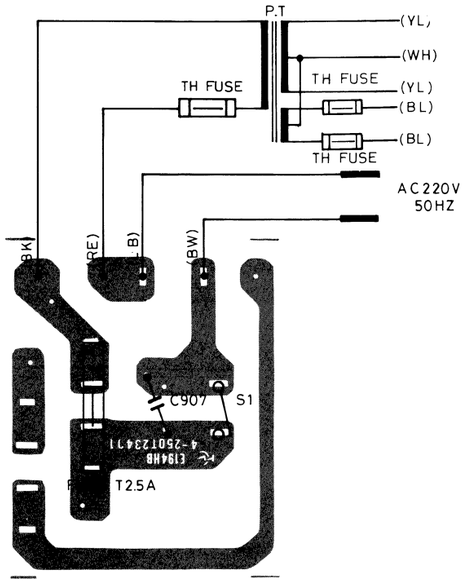
T749 849 ---------- 2SC2344



T736 737 738 739 / T836 837 838 839
T741 742 743 / T841 842 843
T902

T751 851 ------
T752 852 ------

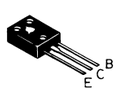
Transistor
Transistor
Contrassegn



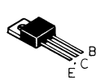
Leiterplatte Netzschalter
P.C.B. Power switch
Piastra interruttore di rete

T731 732 733 746 / T831 832 833 846 ------ 2SA1016
T745 845 ------ 2SC2362
T748 848 ------ 2SA999
T747 847 901 903 ------ 2SC2320

T744 844 ---------- 2SD612

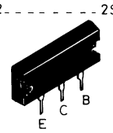


T749 849 ---------- 2SC2344



T736 737 738 739 / T836 837 838 839 --- 2SC2375
T741 742 743 / T841 842 843 ------ 2SA1019
T902 ------ 2SD438

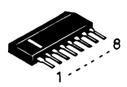
T751 851 ---------- 2SC2564
T752 852 ---------- 2SA1094



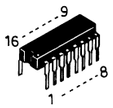
2SK170.....T711. 712
T811. 812

2SA937.....T501. 502
T601. 602
2SC2021 T503. 603

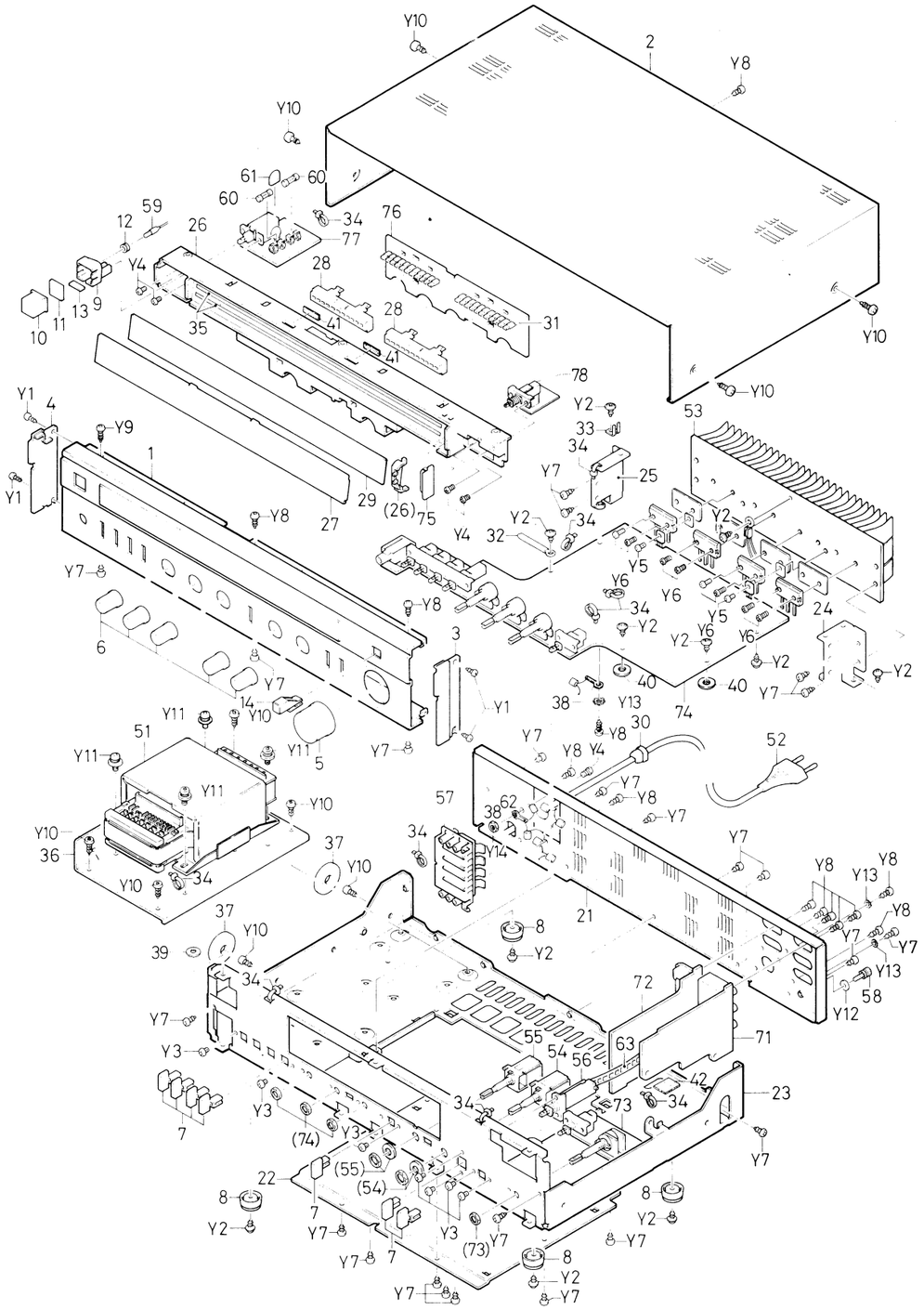
M5218.....IC701



LB1419...IC501. 601



Transistor- und IC-Anschlüsse
Transistor and IC connections
Contrassegni del semiconduttore



Explosionszeichnung — *Exploded diagram* — Disegno posizione